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ABSTRACT

A study synthesized critical findings and implications for teacher preparation from three major research studies and databases completed in 1987-88 by the National Center for Research in Vocational Education: Postsecondary Occupational Education Delivery: An Examination (Hollenbeck et al. 1987); Vocational Teacher Education: A Survey of Preservice and Inservice Preparation (Pratzner 1987); and The Dynamics of Secondary Vocational Classrooms (Weber et al. 1988). Project staff reviewed the analyses of these databases concurrently with policy literature and other research related to teacher preparation and reform. The study highlighted seven broad issues and concerns likely to need the attention of teacher educators and policymakers in vocational education. Lack of minority representation in vocational education was a critical concern. There was a clear need to improve the academic vigor of preservice vocational teacher programs. The nature, amount, and importance of work experience required of vocational teachers needed to be rethought. Basic skills competency testing was a concern since it was an increasingly common requirement for state certification. Preparation of vocational teachers to enhance and reinforce basic skills in vocational programs and to teach special student populations was also identified as a need. New types of vocational specialists needed to be prepared for private sector opportunities. One of the greatest challenges was a paucity of high quality research dealing with critical issues in vocational education and teacher preparation. (Contains 63 references.) (YLB)

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VOCATIONAL TEACHER EDUCATION: IMPLICATIONS FOR SECONDARY AND POSTSECONDARY POLICY AND PRACTICE

Frank C. Pratzner

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FOREWORD

This study sought to synthesize and highlight critical findings and implications for teacher preparation from three major research studies and databases completed in 1987-88 by the National Center for Research in Vocational Education at The Ohio State University: Hollenbeck, et al. 1987, Postsecondary Occupational Education Delivery: An Examination; Pratzner, 1987, Vocational Teacher Education: A Survey of Preservice and Inservice Preparation; and Weber, et al., 1988, The Dynamics of Secondary Vocational Classrooms. Project staff reviewed the analyses of these three databases concurrently with policy literature and other research related to teacher preparation and reform. This review helped to conceptualize critical issues in vocational teacher education and to identify potential implications for vocational teacher education policy and programs.

We wish to thank the Office of Vocational and Adult Education, U.S. Department of Education, for sponsoring the study. The study was completed in the Applied Research Division of the National Center under the leadership of Dr. Richard J. Miguel, Associate Director. We wish to thank the study director, Dr. Frank C. Pratzner. Also we would like to thank Sandra Pritz, Floyd McKinney, and Robert Norton of the National Center for their review and critique of a draft of the report. We are also grateful for the help of Abigail Hurd of the National Center for her typing of the report.

Ray D. Ryan
Executive Director
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EXECUTIVE SUMMARY

Little is known about the current needs of vocational teacher education or the nature and extent of innovative policies and initiatives being undertaken by states and local education agencies to ensure that current and future teachers will be prepared to respond to new challenges in vocational education. This report seeks to provide vocational teacher educators and major policy-making groups with an up-to-date review and status report of critical issues affecting emerging policy and practice in vocational teacher education. Such information should be especially useful to groups involved in the reauthorization of the federal vocational legislation and to local teacher education groups, such as Holmes study groups, in reexamining their institutional policies and practices for vocational teacher preparation. It attempts to provide a synthesis of current data and their implications for vocational teacher education to aid vocational teacher educators to systematically examine their policies and directions for preservice and inservice teacher preparation.

The report summarizes a few of the many critical issues and concerns related to the improvement of vocational teacher education. Obviously, each vocational teacher education institution will face a unique set of needs and will need to pursue its own changes and improvements based upon its reading of the goals and objectives for improvement and its own status and needs relative to their achievement. The report highlights seven broad issues

and concerns likely to need the attention of teacher educators and policymakers in vocational education.

1. Lack of minority representation in vocational education is a critical concern. Although black, Hispanic, and other minority youth and adults are increasingly in need of vocational education programs and services, only a small percentage of secondary and postsecondary vocational teachers are from minority groups. Major efforts are needed to recruit and retain minority vocational educators.

2. There is a clear need to improve the academic rigor of preservice vocational teacher programs if we are to improve the effectiveness, as well as the image, of vocational education and teacher preparation. At present, a vigorous liberal arts component is missing and needed in many vocational teacher preparation programs. This is especially problematic in the trade and industry area where nondegreed teachers are still common.

3. Higher levels of subject matter specialization and competence for teachers than have been common in the past are being called for nationwide. Increasingly, for academic teachers, such high levels of specialization are expected to be acquired through a vigorous 4-year liberal arts program with a concentration of course work in the subject one expects to teach, plus a fifth year or master's degree in pedagogical preparation. What should we in vocational education make of these rigorous liberal arts requirements? Traditionally, vocational education has relied on work experience to ensure high levels of occupational competence (i.e., subject matter specialization) which is very uneven in quality and extremely time consuming. What is the preferred route to achieve high levels of occupational competence? The time seems to have arrived when we need to sort out our assumptions and expectations about the nature, amount, and importance of work experience for vocational teachers.

4. Basic skills competency testing, together with occupational competency testing, is an increasingly common requirement for state certification in vocational education. However, few states are currently testing pedagogical and professional teaching skills. Basic skills testing could discourage nondegreed vocational teachers and competent craftspersons from high school teaching and push them out of teaching altogether or toward teaching in private sector or public postsecondary level institutions, resulting in staffing difficulties at the secondary school level. Minority candidates are disproportionately failing basic skills competency tests contributing further to their underrepresentation in vocational education.

5. There is a need to develop programs and expand preservice and inservice opportunities better to prepare vocational teachers

to enhance and reinforce basic skills in vocational programs and to teach special student populations. At present we are giving little or only modest attention, at best, to these critical and growing needs. In addition to preservice and inservice program development and improvement to help meet these needs, federal and state vocational legislation addressing such services must also recognize the need for adequate preparation and support of teacher preparation.

6. More education and training for work will take place in business and industry in the future than was provided in the past. The continued growth of private sector adult education and training suggests the need to prepare new types of vocational specialists for these private sector opportunities. Research is needed to identify when, how many, and what types of education and training specialists may be needed. New collaborative endeavors between colleges of education/departments of vocational education and other college and university departments may be needed to create new "hybrid" approaches to preparation. Research and policy analyses may also be needed to identify the appropriate mix of pedagogical, occupational, and liberal arts skills for different specialty types and different educational levels and settings.

7. Clearly, one of the greatest challenges facing vocational teacher education is a paucity of high quality research dealing with critical issues in vocational education and teacher preparation. Needed are better preparation and funding for the conduct of vocational education research, less fragmented and narrowly focused research, and a national agenda for cumulative, programmatic research and development guided by theory and focused on persistent problems in vocational education.

SECTION I

INTRODUCTION

Problem

As a result of the school reform and excellence movement and the mandates of the Carl D. Perkins Vocational Education Act, vocational teachers are being called upon to integrate and reinforce basic skills instruction in their programs, improve instruction provided for students with special needs, meet more rigorous state certification requirements (including basic skills competency testing requirements) and possibly, complete longer programs of academic preparation and more rigorous subject matter specialization. However, there is no indication that teachers are being adequately prepared to meet such challenges. In addition, little is known about the nature and extent of innovative policies and initiatives being undertaken by states and local education agencies to ensure that current and future teachers will be adequately prepared to respond to these new challenges in vocational education.

Feiman-Nemser, Floden, & Cohen (1986) point out that more than 20 years ago teacher education was called an "unstudied problem" and researchers were urged to examine what actually went on in programs as one basis for understanding their effects. They further note that, for the most part, "that call went unheeded.

As a result, we know little about what teacher education programs are like and what impact they have on teachers" (p. 4).

In the Metropolitan Life Insurance Company (1984) survey of teacher attitudes, "50 percent of teachers polled felt their preparation did not serve them well in teaching." In fact, "only 10 percent believed their training prepared them well for the classroom" (p. 6).

As little as we know about preservice teacher education, we know even less about inservice education. Very often, inservice training for working teachers is "keyed to taking certain courses, fragmented and unfocused, and not related to a specific area of knowledge or improved classroom technique" (Committee for Economic Development, 1985, p. 78). According to the committee, staff development in education "is a low-funded, low-priority budget item for most school boards. It has traditionally been viewed as a basis for pay increase for credits earned, with little or no attention paid to the specific needs of the individual or the school" (p. 100).

The formal preparation of vocational teachers has not followed a single track or approach. However, almost all states require prospective public vocational teachers to have from three to six years or more of full-time significant occupational experience prior to teaching. Many nondegreed vocational teachers enter teaching directly from business and industry (including the military service) with extensive occupational skills and experience but with few or no pedagogical skills or preparation. This occurs primarily at the postsecondary level and in the private sector

where state licensing and teacher certification requirements beyond occupational competence usually are not a consideration.

Vocational teachers entering public secondary level vocational education from business and industry may also enter teaching directly. But most states require vocational teachers to obtain from 16 to 200 clock hours of initial pedagogical instruction concurrent with their first year of teaching and additional hours of professional skill development annually to maintain state certification. Often this part-time instruction is provided by college or university teacher education programs, and the credits earned may be applied toward baccalaureate degrees in teaching. Alternatively, prospective vocational teachers coming from business and industry may enter full-time baccalaureate degree teacher education programs prior to entering teaching.

Master's and doctoral degrees are typically required for vocational teacher educators in colleges and universities. But, even today, college level vocational teacher educators can be found with baccalaureate degrees only.

Purpose

Given the recent calls for teacher reform, our lack of knowledge about the content of teacher preparation programs, and the Perkins mandates for improving vocational education, we need a better understanding of the role and effects of vocational teachers and teacher education programs.

The purpose of this report is to provide vocational teacher

educators and major policy-making groups with an up-to-date analysis and status report of critical issues affecting emerging policy and practice in vocational teacher education. Such information should be especially useful to groups involved in the reauthorization of the federal vocational legislation and to local teacher education groups, such as Holmes study groups, in reexamining their institutional policies and practices for vocational teacher preparation. It attempts to provide a synthesis of current data and their implications for vocational teacher education to help vocational teacher educators systematically examine their policies and directions for preservice and inservice teacher preparation.

Approach

The study sought to synthesize and highlight critical findings and implications for teacher preparation from three major research studies and databases completed in 1987-88 by the National Center for Research in Vocational Education at The Ohio State University. Project staff reviewed the analyses of the three databases concurrently with policy literature and other research related to teacher preparation and reform. This review helped to conceptualize critical issues in vocational teacher education and to identify potential implications for vocational teacher education policy and programs.

One of the studies reviewed was a survey by Pratzner (1987) of first-year vocational teachers' perceptions of their competencies and their preservice and inservice preparation for teaching. Included as beginning teachers was an unbiased national sample of

740 degreed and nondegreed vocational teachers from 24 states stratified and selected by geographic region. The teachers, predominantly secondary school teachers, represented all of the major vocational service areas, and they began their first year of teaching in school year 1985-86. Additionally, data were obtained from 69 of 114 vocational teacher education institutions in the 24 states surveyed, from 530 school administrators/mentors identified by beginning teachers as individuals who had the major responsibility and best opportunity to monitor their first-year teaching performance, and from the 50 state directors of vocational education.

The second study was a major vocational data collection project conducted by Weber, Puleo, Kurth, Fisch, & Schaffner (1988). This study collected systematic, national data on the content, processes, and outcomes of vocational education programs at the high school level. This national database includes observations of 893 classrooms in 120 high schools. The 120 schools constituted an unbiased, nationwide sample of high schools that offered two or more federally assisted vocational programs, with systematic variations in such factors as school size, type, location, racial/ethnic mix of student body, economic status of the community, and geographic characteristics. Each of the classrooms in the study was observed by one assigned observer on two different occasions (full periods on two different days during a 1-week period). Then the data were accumulated over class periods into a single observational protocol per classroom. Included in this database are data on 267 variables for each of 2,251 teachers (737

observed teachers and 1,514 nonobserved teachers; 1,294 vocational teachers and 939 nonvocational teachers).

The third study focused on public postsecondary vocational education (Hollenbeck, Belcher, Dean, Rider, & Warmbrod, 1987). About 730 institutions, representing over 30 percent of all U.S. institutions offering public postsecondary vocational education, were sampled. At each institution, responses were solicited from as many as 20 different individuals--administrators, instructors, placement directors, chairpersons, and students. Over 6,000 responses were received and used in the analyses. In addition to the survey, project staff spent from 3 to 5 days visiting each of 48 institutions located in 38 different states to interview staff, including instructors, and to observe classroom instruction.

Background

Context of Vocational Education

Public vocational education must be understood within the context of the nation's public education system as well as within the broad context of the vocational-technical education and job training system which requires the cooperative efforts of a variety of agencies and programs. Key among the providers of education and training for work are publicly funded secondary, postsecondary, and adult vocational education; apprenticeship; on-the-job training offered by business, industry, and trade unions; proprietary schools; military job training; and federally funded training programs such as those provided through the Job Training Partnership Act (JTPA) and the Job Corps.

Despite overlaps and gaps, each education and training agency or program has identifiable purposes and clientele. Collectively, they constitute a very significant enterprise, affecting millions of lives and spending billions of dollars annually. They differ from each other fundamentally in their goals--from remediating early socialization gaps to increasing profit margins. Their instructional strategies range from traditional classroom practices to on-the-job mentoring. They focus upon competencies that range from literacy skills to job-ready technical proficiency, from personal development to work socialization, from basic assembly to complex state-of-the-art high technology. Their organizational structures range from federal, state, and local agencies or multi-corporate companies to single programs in a school system or an entrepreneurial operation.

This enormous diversity in programs and services contributes to the broader goal of providing multiple service deliverers at the local level so that individuals at different ages and stages of their lives have options that meet their specific developmental and employment needs. Because these diverse programs have not been viewed by themselves or by others as components of an "articulated system" for work preparation, there has been little coordination or collaboration in their policies, practices, or services (Taylor, Rosen, & Pratzner, 1982; Barnard, Leach, & Hofstrand, 1985). Moreover, they do not share a common philosophy or approach to education and training.

Public secondary vocational education is offered in approximately 17,000 high schools in the nation (National Council on

Employment Policy, 1982). Evans (1982) notes that four principal goals of vocational education are to "(a) provide the skilled workers needed by society, (b) increase the work-related options of trainees, (c) increase the face validity of general education, and (d) enable trainees to improve their working conditions" (p. 267).

One of the more common organizational arrangements for providing secondary level vocational education is as a part of the comprehensive high school. The arrangement of general academic, college preparatory, and vocational offerings tends to generate greater interaction among both students and faculty from all instructional areas. The amount of vocational education provided varies widely from one school to another, depending upon the number of students served, resources available, and interests of students and schools in that particular locality (Weber et al., 1988).

The separate area vocational school, supported by a local school district or a group of school districts, is another organizational arrangement for vocational education. Usually students receive occupational preparation, as well as academic and related education, away from their neighborhood high schools. Sometimes academic courses are taken at the home school and students are transported for one-half days to the area vocational school for occupational preparation. Area vocational schools have a broad base of support and, thus, are able to offer a wide variety of vocational programs.

Vocational education in the United States has developed, by and large, as an adult enterprise. Little vocational education per se is available in American schools below the ninth grade level. However, prevocational programs such as career education, industrial arts (technology education), and home economics are provided as part of the general education curriculum.

At the secondary level, vocational education is virtually the only formal system of job preparation available to youth in this country. It is the mainstream system for youth to obtain education and training for work that requires less than a baccalaureate degree. All of the other major job training programs, such as those offered through apprenticeship, the military services, employers, proprietary schools, and community colleges are adult programs. They are available only to adults or to older youth who have completed high school and/or are at least 17 to 18 years of age.

At the postsecondary level, vocational and technical programs are offered in 2-year colleges, area vocational-technical schools and technical institutes. Postsecondary enrollment has increased sharply in the last few years, as displaced and underemployed youth have sought skills that are more saleable in a rapidly changing labor market. In 1970, there were fewer than 1 million students in postsecondary programs; by 1984, there were over 10 million (National Center for Education Statistics, 1984).

Individualized instruction has facilitated "open-entry/open-exit" programs in many postsecondary schools. In the ideal form of such programs, students may enroll in and begin a program

designed to meet their personal needs and occupational goals at any time during the school year. They proceed through the program at their own rates of learning and leave the program when they have achieved the required skills. Open-entry/open-exit programs are now more common in postsecondary schools and private sector training programs where compulsory school attendance laws are not a consideration.

Cooperative education programs have been highly successful. Students work part-time in business establishments and spend part-time in the school pursuing their general education and vocational program. Training on the job is supervised by school personnel. Many groups throughout the country urge expansion of cooperative programs as a way of making education more relevant to students and broadening the impact of vocational and technical education.

Competency-based education (CBE) is an important development that has gained wide acceptance in vocational education (Finch, 1982). In this approach, performance objectives and standards are specified and agreed upon with students in advance of instruction. Each student then progresses systematically through an organized series of highly structured learning experiences, presented as learning packages or instructional modules. At each step, the student must demonstrate ability to perform the task before moving on to another learning assignment.

Numerous studies of performance or competency-based teacher education (CBTE) were conducted throughout the 1970s. Cotrell, Chase, & Molnar (1972) identified 384 professional teacher competencies and launched a decade of research and development on CBTE.

Weber et al. (1988) point out that although competency-based instruction is quite prevalent, the available data provide few insights into the quality of the approaches or the extensiveness with which they have been implemented (p. xxi).

Adult vocational-technical programs constitute an important part of vocational education at both the secondary and post-secondary levels. In light of current economic and social trends, the occupational emphasis in adult education is not surprising. Millions of adults are finding that jobs in expanding areas of the economy for which they are qualified are unavailable. These adults must either change career focus or upgrade their knowledge and skill levels.

A System in Transformation

Along with the rest of public education, vocational education is in a period of turmoil and rapid change. Compounding the reforms in the education system itself, profound and lasting changes are taking place in the nature of jobs and in the organization of work. Significant technological changes and quality of work life developments are being implemented to improve the productivity, quality, and international competitiveness of U.S. business and industry. Major social and demographic changes represent other factors shaping the way we live and work. These developments appear to have significant implications for vocational education and,in particular, for vocational teacher education (Levine & Rumberger, 1983; Sherman, 1983; Pratzner & Russell, 1983, 1984; Wirth, 1983a, 1983b).

Educational dimensions of change. American education is experiencing a significant decentralization in the management of the educational enterprise. Authority and responsibility continue to increase at the local school level (Mackenzie, 1982; Darling-Hammond & Berry, 1988). Administrators and teachers are working more closely with parents and other interested stakeholders (e.g., school boards, employers, district personnel, and so forth). The major role of school administrators is becoming one of developing broad, visionary policies on the basis of extensive interactions with stakeholders.

Teaching is also becoming more complex and diverse than in the past. Teachers likely will continue to have more involvement with their students and the community, be evaluated more frequently, and have major responsibility for program reorientation (National Commission for Excellence in Teacher Education, 1985; National Commission on Excellence in Education, 1983; National Governors' Association, 1986).

The preparation of teachers will change drastically if Holmes Group and Carnegie Forum recommendations are implemented. For example, the move by major research institutions of higher education to require a 5-year preparation program has serious implications, especially for those areas of vocational education so reliant on work experience as a key criterion for teachers.

The major efforts underway to upgrade significantly the selection, preparation, certification, and remuneration of teachers will affect vocational education. Among the issues of particular concern to vocational education are the impact of higher

standards for preparation and certification on the supply of new vocational teachers, what to do about nondegreed vocational teachers--including those already teaching and those who may seek entry into vocational teaching from business and industry, how to update and upgrade vocational teacher preservice and inservice preparation rapidly, and how to attract and retain minority vocational teachers.

One consequence of the school reform and excellence movement is that the role and function of vocational education at the secondary school level have been called into serious question. A a major reexamination is underway (see, for example, Pratzner, 1985, 1984; Pratzner & Russell, 1983; Lotto, 1986; Oakes, 1986; Kadamus & Daggett, 1986; Ryan, Miller, & West, 1984). This reexamination of high school vocational education has contributed, in turn, to the reappraisal of postsecondary level vocational education and its articulation with secondary level programs (National Commission on Secondary Vocational Education, 1985).

In spite of the uncertainty surrounding the appropriate role of vocational education in the high school, a consensus is growing that vocational education should give substantial attention to enhancing and reinforcing students' basic skills (see, for example, Bennett, 1985; Carl D. Perkins Vocational Education Act, 1984; National Commission on Secondary Vocational Education, 1985; Pratzner & Russell, 1983; Shields, 1984). The way this is to be done and the means for assessing the results are unclear. Moreover, the skills often called "basic" are expanding from reading, writing, and arithmetic to include such areas as learning to

learn, group process skills, problem solving, decision making, and critical thinking (Pratzner & Russell, 1984). Relatively little is known about the specific nature of these skills and the approaches and techniques needed for their effective practice, application, and enhancement.

Economic/technological dimensions of change. Uncertainty and disagreement exist about the nature of economic change and technological developments in the workplace, and their impact on skill requirements and on the education and training needs of workers. However, two broad types of educational consequences seem to be especially important for teacher preparation: (1) changes in the skills and skill levels of workers resulting from sociotechnological (i.e., social and organizational as well as technological) changes at work, and (2) changes in the workplace as a learning environment for continuing and recurrent education.

Clearly, more education and training for work will take place within business and industry in the future than was true in the past. Given the current rate of technological change, the demographics of the labor force, and the changing attitudes and approaches to work by large segments of the work force, employers will be increasingly pressed to design and implement workplaces that function effectively as continuous learning environments. These increases in industry-specific training have important potential implications for vocational teacher preparation.

Social/demographic dimensions of change. The effects of social and demographic changes on education and vocational education are many and are discussed extensively in the literature

(see, for example, Thornton, 1984; U.S. General Accounting Office, 1986; American Vocational Association, 1986; Trafford, 1984; Young, 1985; Adams, Pratzner, Anderson, & Zimmerer, 1987). Much less literature and concern is evident for the implications of such demographic changes as the aging of the U.S. populations, continuing rapid increases in all minority population, increases in nontraditional occupational roles, and significant changes in life-styles and in the management and organization of work for vocational teacher preparation.

Our society is experiencing rapid increases in minority populations. Over one third of new births are minority. Thornton (1984) points out that 28.6 million blacks account for 12.1 percent of the population. Hispanic Americans, now numbering around 16 million, are expected to become the largest minority group in the next decade. Asian Americans, the fastest-growing group, jumped 128 percent in 1 decade to total 3.5 million in 1980.

Few educators are prepared to deal with the problems spawned by these demographic trends. In many of our urban areas "minority majorities" increasingly will occupy the classrooms. At the same time that standards of academic excellence and achievement are increasing, schools must find ways to ensure effective learning by increasing numbers of black, Hispanic, and other minority youth, many of whom traditionally have not done well in academic settings and have tended to drop out of school at higher rates. How these academically less able and dropout-prone students are best served and what role vocational education should play in quality

education for these groups are unanswered questions of great concern.

Along with the task of determining how best to serve the needs of an increasingly culturally diverse student body, schools are facing the difficult task of dealing with a significant drop-out problem. Across the nation, more than one in every four students enrolling in the ninth grade drop out before high school graduation. Compared to white students, the dropout rate for black students is just under twice as great, and for Hispanic students it is twice as great (U.S. General Accounting Office 1986, p. 6). In some school systems, the dropout rate for Hispanic students approaches 70 percent. Dropouts experience higher unemployment rates and lower earnings throughout their lives, creating a potential future dual-class society. In effect, many of these individuals drop out not only of school, but also they drop out of life (American Vocational Association, 1986).

Lower birthrates, increased life expectancy, and the aging of the "baby boom" generation are the causes of America's aging. By 1990, the number of people between the ages of 30 and 44 will increase by 20 percent and total 60 million. This aging process is resulting in decreased spending for elementary and secondary education coupled with an increased need for adult education.

Workers with critical technical skills will be retiring at an increasingly rapid rate. For example, the average age of the nation's 300,000 machinists is 58, yet industry presently is training only one fourth of the skilled machinists needed each

year (American Vocational Association, 1986). Responses to these shortages need to be developed.

In general, the decline in labor force growth, the search for self-fulfillment, increased levels of educational attainment, increased numbers of two-wage-earner households with fewer children, the move toward more permanent part-time work, and the increased competition for fewer middle management positions by the increasing numbers of people from the "baby boom" cohort are all signals of the changes occurring at work. They provide powerful incentives for employers to be flexible in meeting the personal needs of workers and managers, and they have important implications for vocational education and teacher preparation.

Because vocational education is a part of the nation's educational system and a major component of this diverse employment and training system, vocational teacher education programs not only prepare vocational teachers for public school programs, but also they are a major supplier of a variety of education and training specialists for vocational education and job training in the private sector as well. Consequently, vocational teacher preparation cannot be solely responsive to the needs or directions of the public education system. Needs, directions, and changes within any of the diverse agencies and programs that make up the nation's education and job training system may have significant implications for vocational teacher preparation.

SECTION 2

KEY ISSUES AND CONCERNS IN VOCATIONAL TEACHER EDUCATION

This section highlights key issues and concerns that grow out of the findings from the three research studies and the literature and other research reviewed for the study. Each of these findings, issues, and concerns is discussed in terms of their relationship to vocational teacher preparation and implications for its improvement. They are not discussed in any particular order or priority.

Minority Representation in Vocational Education

The first major concern related to the improvement of vocational teacher preparation has to do with the lack of minority representation in vocational education. In the Pratzner (1987) study of 740 beginning vocational teachers, the large majority (86.2 percent) were white, 3.1 percent were Hispanic, and 3.12 percent were black. The remainder were American Indian (N = 11), Asian American (N = 4), or did not report their race (N = 24).

Another major study of vocational education conducted by Weber, et al. (1988) compiled a national database from observations of 893 classrooms in 120 high schools. This study found that 7 percent of their sample of 1,294 vocational teachers were black, whereas 5 percent were from other minority groups.

Similarly, a recent study by Hollenbeck, et al. (1987) of 730 public postsecondary vocational institutions nationwide found that the average proportions of 1,239 vocational instructors by racial/ethnic origin were 91 percent white, 4.7 percent black, and 1.6 percent Hispanic.

Interestingly, a national survey of college education majors by the American Association of Colleges for Teacher Education (AACTE) (1987) confirms that the racial mix of this study's samples of vocational teachers is also an accurate reflection of the ethnic mix for all education majors. It found that 5 percent of education students in the same 1985-86 academic year were black, while only 3 percent were Hispanic.

These data on race seem to be an accurate reflection of conditions in the field of vocational teaching as a whole, and they point up the fact that the lack of minority vocational teachers is a serious problem. Moreover, unless a major minority recruitment and enrollment effort is made within the field, it is a problem that will grow increasingly more serious as the number of minority students in high school and in vocational programs rapidly increases in the years immediately ahead. Although such a recruitment effort is critical, it will also be increasingly more difficult in the future as others within and outside education seek to extend their own minority recruitment and training programs, and as minorities continue to broaden their employment opportunities and seek preparation for jobs with higher salaries and more prestige than teaching.

Rigor of Preservice Programs

The second major concern related to the improvement of vocational teacher preparation is the clear need to improve the academic rigor of preservice vocational teacher programs. The need for this improvement is evidenced by three sets of related findings: (a) that the entry requirements for programs have not changed much in the 1980s and do not appear to be very stringent, (b) that nondegreed vocational teachers are still common in the field, and (c) that the number of credits earned by vocational teachers in academic subjects is comparatively low.

Entry Requirements

For example, Pratzner (1987) found there was no apparent change from the early to mid 1980s in the number of teacher education institutions requiring courses in communications and mathematics or in the average number of credits required in these courses for admissions to teacher education programs (see table 1). In general, about 7 to 8 credits on average were required in communications courses, and 4 to 5 credits on average in mathematics courses were required for program admission.

TABLE 1

PREREQUISITE COURSES IN COMMUNICATIONS AND MATHEMATICS REQUIRED FOR ADMISSION TO PRESERVICE VOCATIONAL TEACHER EDUCATION PROGRAMS

Entry Requirements	Current Entry Requirements				Requirements for 1985 Grads			
	No.	%	Average No. Credits Required		No.	%	Average No. Credits Required	
Communications (including English and language arts)	41	(61)	67.2	7.7 (31)	30	(50)	60.0	7.5 (23)
Mathematics (including algebra, geometry, statistics, etc.)	31	(60)	51.7	4.8 (24)	21	(47)	44.7	3.6 (18)

Interestingly, almost 88 percent of the institutions (N = 57) required one or two additional courses in mathematics, and 71 percent required three to four additional courses in communications as part of their vocational teacher education programs (see table 2). A course was defined as one that met for 2 to 5 classroom hours per week during one semester or quarter. Additionally, 64 percent required two to three courses in the social sciences. Almost 59 percent required one course in computer skills, whereas 32 percent did not require computer skills courses. Comparing the average number of courses actually taken in these academic areas by beginning vocational teachers (table 3) with the institutional course requirements in the areas (table 2) shows that, in general, the beginning teachers met or exceeded the institutional requirements in each of the areas.

TABLE 2

INSTITUTIONAL COURSE REQUIREMENTS IN ACADEMIC AREAS OTHER THAN EDUCATION

	NUMBER OF COURSES												
	None		One		Two		Three		Four		Five or More		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Mean
Communications, e.g., English, language arts, speech	2	3.1	2	3.1	9	13.8	31	47.7	15	23.1	6	9.2	3.0(65)
Mathematics, e.g., algebra, geometry, statistics	3	4.6	27	41.5	30	48.2	4	8.2	1	1.5	--	---	1.6(65)
Humanities and Fine Arts, e.g., languages, philosophy, music	3	4.7	3	4.7	16	25.0	25	39.1	9	14.1	8	---	3.0(64)
Science, e.g., biology, geology	2	3.1	5	7.8	24	37.5	16	25.0	9	14.1	8	12.5	2.8(64)
Social Sciences, e.g.,psychology, economics	2	3.1	--	---	18	28.1	27	42.2	10	15.9	7	10.9	3.0(64)
Computer skills, e.g., keyboarding, programming	21	32.3	36	58.5	4	6.2	2	3.1	--	---	--	--	0.8(65)

SOURCE: Pratzner, 1987.

TABLE 3

COURSES TAKEN BY BEGINNING VOCATIONAL TEACHERS
IN AREAS OTHER THAN EDUCATION

Areas of Study	Percent of Teachers Taking Courses (Number of courses) 1	2	3	4	5 or more	None	Mean
Communications, e.g., English, language arts, speech	5.0	8.2	21.7	22.3	32.4	10.4 (695)	3.38
Mathematics, e.g, algebra, geometry, statistics	17.9	22.5	20.3	12.6	13.0	13.7 (693)	2.40
Humanities and Fine Arts, e.g.,languages, philosophy, music	8.1	16.0	21.5	15.6	25.6	13.2 (692)	2.97
Science, e.g., biology, geology	9.0	18.7	16.8	14.3	27.5	13.6 (690)	2.91
Social Science, e.g., psychology, economics	6.8	13.2	18.3	18.1	32.2	11.4 (690)	3.23
Computer skills, e.g., keyboarding, programming	23.4	14.6	8.3	5.1	9.1	39.6 (685)	1.43

SOURCE: Pratzner, 1987

Nondegreed Teachers

Pratzner (1987) also found that, whereas 75 percent of the beginning teachers had completed bachelor's degrees or higher levels of education, one fourth (26 percent or 193 teachers) were "nondegreed" teachers having completed some college, or perhaps a 2-year associate degree, but not having completed the baccalaureate degree (see table 4). Moreover, the health, trade and industrial (T and I) subjects, and technical occupations service areas

had significantly more nondegreed teachers than the other service areas. In fact, about 73 percent of the T and I teachers did not have degrees (N = 108), half of the technical teachers (N = 17) and half of the health occupations teachers (N = 25) did not have degrees.

TABLE 4

NUMBER AND PERCENTAGE DISTRIBUTION OF VOCATIONAL TEACHERS BY HIGHEST LEVEL OF EDUCATION COMPLETED

Educational Level	No.	%	
High school diploma only	21	2.9	
Some college--no degree	110	15.1	26.5%
Associate degree (2 or more years)	62	8.5	
Bachelor's degree	117	24.4	
Bachelor's degree plus	283	38.8	
Master's degree	32	4.4	75.2%
Master's degree plus	40	5.5	
Doctorate	5	.7	

SOURCE: Pratzner, 1987.

Credits in Academic Subjects

With respect to academic programs, if it is assumed that a college course is equivalent to three college credits, then the courses taken and institutional credit requirements in the five major academic areas (or mathematics, English, social science, science, and humanities) for the beginning vocational teachers can be compared to three other estimates of academic requirements.

These three estimates are all based upon a study of college transcripts conducted by Galambos, Cornett, & Spitler (1985) for the Southern Regional Education Board (SREB). Although there was considerable variability among the 17 institutions included in the SREB study and among the 69 institutions in the present study, several trends can be noted (see table 5).

TABLE 5

COMPARISONS OF BEGINNING TEACHER ACADEMIC PREPARATION WITH SREB TRANSCRIPT STUDY DATA

	Beginning Teacher Study		SREB Transcript Study		
	Average Credits Taken by Teachers	Average Institutional Requirements	Average for Academic Teachers	Average for Arts & Science Majors	Average Catalog Hours Requirements
Mathematics	7.2	7.2	6.0	7.2	3.0
English	10.2	9.0	11.3	11.8	6.0
Social Science	9.6	9.0	21.6	20.4	6.0
Science	9.0	8.4	11.6	12.2	3.0
Humanities	9.0	9.0	26.1	34.0	--

SOURCE: Pratzner, 1987

First, it can be seen that, in all academic areas, the average institutional requirements reported for the 69 institutions in the present study exceeded the average catalog requirements listed for the 17 SREB institutions. Second, on average, the number of credit hours reportedly taken by beginning vocational teachers in mathematics (7.2 credits) is about the same as the average number of mathematics credits taken by either academic teachers (6.0

credits) or by arts and science majors (7.2 credits).* The average number of English credits taken by the beginning vocational teachers (10.2 credits) was slightly less than the average number of English credits taken by the academic teachers and the arts and science majors (11.3 and 11.8 average credits respectively).

In each of the other three academic areas, the academic teachers and arts and science majors in the SREB study on average greatly exceeded the beginning vocational teachers in average credits taken and in average institutional requirements. Thus, it seems that preservice vocational teacher programs and teachers were not greatly different from their academic counterparts, or arts and science majors in general, in terms of their basic skills (mathematics and English) requirements. However, it seems clear that, in general, the beginning vocational teachers did not pursue rigorous liberal arts programs. In general, they were considerably below academic teachers and arts and science majors in science, social science, and humanities credits required or earned. Moreover, analysis of variance revealed that T and I teachers took significantly fewer courses in these academic areas in their preservice preparation than any of the other beginning vocational teachers.

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*However, it should be noted that Galambos et al. found that lower level mathematics courses, remedial courses, and courses in mathematics explicitly designed for teachers help account for the average number of credits in math for academic teachers. This may be the case for beginning vocational teachers as well, but data were not collected regarding the exact nature of the courses or credits taken by the beginning vocational teachers.

At present, a rigorous liberal arts component is missing and needed in vocational teacher preparation. Moreover, because the concept of integrating and infusing basic skills into vocational teaching is gaining widespread acceptance, vocational teachers with sound basic skills preparation will be needed.

Whereas changes in teacher education policies and practices growing out of Holmes and other reform group recommendations should help to improve the rigor of vocational teacher preparation, other equally compelling and long-standing practices work against this and must be addressed. For example, such practices as the heavy insistence on "increased FTE production" in many institutions often dissuade faculty and students from seeking appropriate and rigorous preparation outside their major departments and must be discouraged or changed if substantial progress is to be possible.

Teacher Work Experience

The third major concern related to vocational teacher preparation involves the nature, amount, and importance of work experience required of vocational teachers. Whereas Pratzner (1987) found that, on average, 3 years of work experience was required for teacher program admission, anywhere from 3 to 6 years and more of full-time work experience is usually required for state certification. This requirement is probably what accounts for the finding that the average age of beginning vocational teachers is 33.2 years old, ranging from 22 to 66 years old, and somewhat higher than might be expected for beginning teachers in general.

The Weber et al. (1988) study found the average age of secondary school vocational teachers to be 43.8 years, and, in the Hollenbeck et al. (1987) study, the average age of postsecondary vocational instructors was 45.2 years old.

Given recent changes in teacher education, teacher reform proposals, and changes now occurring or expected in vocational education, the time may have arrived when we need to reexamine our assumptions and expectations about the nature, amount, and importance of work experience for vocational teachers. However, these determinations will not be easy because they are dependent upon a number of complex and interwoven issues and concerns.

For example, teacher educators and the public in general expect higher levels of subject matter specialization and competence on the part of teachers than may have been expected in the recent past. For academic teachers such high levels of specialization are expected to be acquired through a rigorous 4-year liberal arts program with a concentration of course work in the subject area that one expects to teach, plus a fifth year or master's degree in pedagogical preparation. "This requirement, which has been advocated strongly by two major reform groups in teacher education [the Carnegie Forum on Teaching (1988) and the Holmes Group (1986)] is also favored by 72 percent of the public. Only 17 percent oppose it" (Gallup & Clark, 1987, p. 27). Moreover, a recent poll of 1,513 adults and 202 top executives from 1,000 of the country's leading corporations conducted for the Carnegie Forum on Education and the Economy by Louis Harris and Associates, revealed that "nearly 80 percent of the public and 68

percent of the business executives favored the forum's recommendation that teachers obtain a 4-year college degree in the subject they plan to teach" (Education Daily, August 27, 1986, p. 2.) Also, according to the survey, most of the adults and top executives "believe teachers should be required to demonstrate full command of the subject they teach and the ability to communicate that knowledge to students" (Ibid.).

The expectation that all teachers will have at least a 4-year bachelor's degree in the liberal arts and an additional fifth year or master's degree in teaching, while desirable, will be extremely difficult to achieve throughout vocational education. Obviously, this is not the route by which vocational teachers can achieve high levels of occupational competence, so what should we in vocational education make of these more rigorous liberal arts requirements? Secondly, what is the preferred route for achieving high levels of occupational competence? Is it best acquired through many years of full-time, on-the-job work experience, which is the traditional and continuing requirement, or can it be acquired equally well and/or more efficiently by prospective vocational teachers through highly specialized and sophisticated occupational preparation programs now available in community colleges and postsecondary technical institutes? In other words, do these highly specialized occupational preparation programs in community colleges and technical institutes offer a viable and more efficient alternative to years of direct on-the-job experience? What kinds of on-the-job experiences are the best for acquiring the levels of competence needed for teaching? Finally,

if secondary school vocational programs continue to evolve toward teaching more generic skills needed for work, rather than job-specific training, and focus more on enhancing and reinforcing students' basic skills, just how much and what types of specialized occupational skills and experiences are required by vocational teachers?

Obviously, not one of these questions has an easy answer. But the time seems to have arrived when we need to address them and to sort out our assumptions and expectations about work experience and subject matter specialization for vocational teachers.

Moreover, acquiring liberal arts degrees with majors in the subjects they plan to teach may not be sufficient preparation for academic teachers to demonstrate full command of the subjects they teach and the ability to communicate that knowledge to students. Beyond the requirement for liberal arts degrees and pedagogical expertise, state certification requirements and the major teacher reform groups must recognize the need for all teachers, especially academic teachers, to acquire significant amounts of practical, on-the-job work experience in or related to their academic disciplines. It seems that almost 70 years of experience in public vocational education and recent experiments, primarily in New Jersey, with alternative routes to teaching have shown that this may be a promising way eventually to reduce some of the abstractness and lack of relevance of much of current academic teaching and its detrimental effects on students.

Testing for State Certification

The fourth major concern is related to testing for state certification in vocational education. Vocational teacher education institutions will need to work especially closely with state departments of vocational education to develop appropriate tests of pedagogical skills and professional knowledge. Of the 50 states surveyed in the beginning vocational teacher study, 23 (45 percent) indicated that basic skills competency testing was part of the state mandated requirements for the certification for vocational teachers. Similarly, in 26 states (52 percent), occupational competency testing was a certification requirement for vocational teachers. In 14 (28 percent) of the states surveyed, testing in both basic skills and occupational competency was required for vocational teacher certification. However, hardly any states were testing the pedagogical and professional teaching skills of prospective vocational teachers. Thus, the issue of achieving an appropriate balance in the testing of basic academic skills, pedagogical skills, and occupational skills needs to be addressed.

Another issue that will need to be considered is the likelihood that raising basic skills test requirements for vocational teachers could discourage competent craftspersons and technicians from high school teaching, push them out of the teaching profession altogether, or push them toward teaching in the private sector or at the public postsecondary level where certification and competency testing are presently not major issues or concerns. Moreover, it has been well evidenced that minority teachers are

underrepresented in the teaching profession (Pratzner, 1987), and that a disproportionate number of minority candidates are failing tests of certification. The full impact of this state of affairs is still unknown. However, a newly released report by the U.S. Department of Education's Office of Educational Research and Improvement (OERI) (1987), looking at the impact of the teacher testing phenomenon upon minority group members, finds that "there has been a drop in the supply of talented, well educated minority teachers and this is occurring at a time when there is an increasing need for black, Hispanic and Asian-American classroom instructors" (Teacher Education Reports, September 10, 1987, p. 5). Consequently, policymakers need to assess the full societal, cultural, and political impact of teacher competency testing before its full-blown implementation. On the other hand, of course, one cannot lose sight of the fact that, in today's workplace, where technology is expanding at an exponential rate, developing vocational education students' basic skills has become as important as developing their occupational skills. Therefore, the concept of integrating or infusing basic skills preparation into vocational education is gaining more acceptance. In order to achieve this objective, vocational teachers will be needed with sound basic skills and appropriate preparation to teach such skills.

Preparation To Teach Basic Skills and Special Needs Students

The fifth major concern related to the improvement of vocational teacher preparation is the need to expand and improve

preservice and inservice programs relative to teachers' basic skills preparation and preparation to teach special student populations. Pratzner (1987) and Weber et al. (1988) found that, at present, we are giving little or only modest attention, at best, to these critical needs. Beginning teachers take very few courses or even parts of courses to prepare them for teaching basic skills and special needs students. Most teachers say they spend from 1 to 3 hours per week improving and reinforcing students' basic skills. And, the majority of teachers did not rank basic skills among the top four skill areas they emphasize in their teaching. In Weber's nationwide study of secondary classrooms cited earlier (Weber et al. 1988), about 63 percent of the episodes observed in vocational classrooms involved one or more basic skills. However, in only 2.3 percent of the episodes were basic skills considered a focal topic. Moreover, teachers are ill prepared to recognize these basic skills teaching opportunities and to convey these opportunities to students.

In addition to direct improvements in teacher preparation programs, we must seek improvements in federal and state vocational legislation, as well as a means for making needed and effective change in vocational teacher education. For example, the current federal vocational law mandates enhancement and reinforcement of basic academic skills in vocational programs and improvement of teaching of special student populations. However, mandating such complex and important changes in vocational education assumes that the changes can be achieved by vocational teachers alone and without adequate preservice and inservice teacher

preparation and continued support. Pratzner (1987) suggests that this simply is not happening. The current law, which took effect in 1983 prior to publication of the Nation at Risk report (National Commission on Excellence in Education, 1983) and other crucial reports and developments in the teacher reform and excellence movement, entirely overlooked and ignored teacher preparation and the critical importance of appropriately prepared teachers in carrying out its mandates.

The time to act to correct this particular problem in the federal vocational law is now because the reauthorization process is currently underway and should peak following the November, 1988, elections of a new president and a new congress. Vocational teacher educators probably can do more now to further the cause of improvement in teacher education than at most other times. It is important that vocational teacher educators seek to persuade and have input into the reauthorization proposals of key policymaking groups such as the state directors of vocational education and the American Vocational Association regarding the importance of support for improvements in vocational teacher education.

New Types of Vocational Specialists

The sixth concern has to do with the need for preparation of new types of vocational education and training specialists growing out of (a) changes within schools, and (b) changes in adult education and training particularly in the private sector.

It seems likely that vocational teacher preparation (preservice and inservice) will need to update and modernize its

programs to include new approaches for the preparation of new teaching roles, titles, and responsibilities resulting from greater staff differentiation and career ladder initiatives--for example, teacher evaluators, beginning teacher monitors, curriculum specialists, and so forth. Additionally, new programs and approaches will likely be needed to prepare vocational teachers for greater autonomy, participation and shared decision making in school-wide management and operation. This may require transferring the technology of participative management from private sector business and industry to public sector education and the preparation of teachers to function effectively in such participative environments (Pratzner, forthcoming).

However, facing declining enrollments, loss of faculty and staff positions, and reduced budgets and other resources (B. Anderson, 1986; L. Anderson, 1986; Miller, 1987), vocational teacher education may no longer be able to focus only on the preparation of vocational teachers for public secondary schools. Much more attention than in the past may need to be given to updating and modernizing vocational teacher education to make it more responsive to emerging needs and directions in adult and postsecondary education and job training, particularly in the private sector. Key among the providers of adult education and training for work are business, industry, and trade unions; apprenticeship; proprietary schools; public postsecondary and adult vocational education; military job training; and federally funded programs such as the Job Corps and programs available through the Job Training Partnership Act (JTPA).

Vocational education in the United States has developed, by and large, as an adult enterprise. Most of the major job training agencies and programs noted above are adult programs available only to adults or to older youths who have completed high school and/or are at least 17 to 18 years of age.

At the public postsecondary level, enrollment has increased sharply in the last few years as displaced and underemployed workers have sought skills that are more saleable in an intensely competitive and technologically sophisticated global market. In 1970, there were fewer than 1 million students in postsecondary programs; by 1984, there were over 10 million (National Center for Education Statistics, 1984).

As impressive as the growth of public postsecondary education is, Carnevale & Goldstein (1983) point out that "employee training by employers is by far the largest system of adult education" (p. 36). Boyer (1935) estimates that corporations are spending $40-$60 billion to train and educate nearly 8 million students/employees annually. He points out that this approaches the total annual expenditures of all of America's 4-year and graduate colleges and universities. Moreover, as noted by Carnevale & Goldstein (1983), Goldstein (1980), and Zemsky & Meyerson (1985), measurement problems and the lack of detailed company records systematically drive estimates of employee training below actual levels.

More education and training for work will take place in business and industry in the future than was provided in the past. The U.S. economy is expected to continue to grow at least at its

current rate through the year 2000. According to the U.S. Department of Labor (1988), "more sophisticated jobs will demand greater skills. Fewer young people will be entering the labor market, and a growing fraction will be minorities who are traditionally educationally disadvantaged as a group. Greater flexibility will be demanded of all workers, but particularly the middle-aged worker" (p. 34175). The Department of Labor goes on to point out that, "in the anticipated tight labor market of the year 2000, employers will be forced either to seek out and invest in workers heretofore underutilized, or to bid up wages or export jobs overseas" (p. 34175). It concludes that if the nation is to prosper in the global market of the 21st century, it must "fully integrate women, blacks, Hispanics, immigrants, and handicapped workers into the economy; provide the work force with the education and skills that new jobs in the expanding service-oriented economy will demand; ensure that the increasingly middle-aged work force is adaptable and retains its willingness to learn; and reconcile the conflicting demands of work and family responsibilities especially for women" (p. 34175).

The continued growth of private sector adult education and training suggests that preparation of new types of vocational education and training specialists for the private sector is becoming an expanding market for vocational teacher education. If vocational teacher education does not move quickly and imaginatively to respond to these emerging needs, others within such university departments as industrial psychology and business administration might, as will private industry consulting firms.

To maintain a share of this "growth market," vocational teacher preparation will need to develop a range of alternative programs and perhaps certification criteria for new and emerging education and job training specialists--specialists such as job analysts and instructional materials developers, adult counseling and workplace learning specialists, multicultural counselors and job training specialists, bilingual vocational trainers, instructional evaluators, cross-training analysts and instructors, and test developers/validators for hiring, promotion, and retention of employees. Research will be needed to identify such information as when, how many, and what types of education and training specialists will be needed. New collaborative arrangements with other college and university departments and schools, as well as research and development, will be needed to create new "hybrid" programs, approaches, and multidisciplinary specialities in such broad areas as human resource development, human performance assessment, and training and development in business and industry. And research and policy analysis will be needed to identify the appropriate balance or mix of pedagogical skills, occupational experience, and liberal arts preparation for different specialty areas and different education levels and settings at both undergraduate and graduate levels.

Research in Vocational Teacher Education

The seventh major concern has to do with the lack of available research on critical vocational teacher education problems.

Clearly, one of the greatest challenges facing vocational education is a paucity of high quality research dealing with critical issues in vocational teacher education.

The 1962 issue of the Review of Educational Research on vocational, technical, and practical arts education listed 10 studies in teacher education. In his review of research in vocational technical teacher education from 1962 to 1967, Moss (1967) concluded that, "with some exceptions, little has been done which materially contributes to the development of a science of teacher education. . . . At present, we are still operating programs primarily on the basis of tradition, conventional wisdom, and personal experience" (p. 26).

The period between 1967 and 1973 was no more fruitful according to Peterson (1973). He reviewed research on vocational teacher education for the period and concluded that it "was quite frequently the result of doctoral dissertations or graduate research fellows. Teacher educators are undoubtedly giving first priority to teaching responsibilities and research efforts have a secondary claim for time" (p. 27). "At best the research appears piecemeal and without reason or order" (p. 32).

Adamsky & Cotrell (1979) reviewed the vocational teacher education research from 1973 to 1979. They found that the majority of research studies dealt with identifying teachers' occupational competencies, experience and use of task-analytical approaches, and performance-based vocational teacher education that continued to grow and spread throughout the states (p. V). However, they concluded that "vocational teacher education remains

an ancillary activity, . . . research in this field remains sparse overall, and . . . there has not been much progress recently toward establishing vocational teacher education as an intellectual field within the broader area of educational research (p. V)." This lack of high quality research may be due in part to an overall decline in funding and other resources for education research from the highs of the 1960s and early 1970s to the 1980s (Adamsky & Cotrell, 1979), to a lack of attention and support for vocational teacher education in recent federal vocational law, and to a lack of consensus on the appropriate role and direction of public vocational education in America (see Editorial Board of the Journal of Industrial Teacher Education, 1988).

A pervasive problem with much of the limited research that is available, and a possible contributing reason for the lack of high quality teacher education research, is that it is often fragmented and narrowly focused. There is not a cumulative body of research guided by theory and focused on persistent problems of national significance in vocational teacher education (Cheek, 1988; Peterson, 1973). Instead, much of the available research is directed at state-level issues and concerns and/or it is narrowly focused on one of the five or six major occupational service areas within vocational education. Thus, it is extremely difficult, if not impossible, systematically to accumulate or synthesize research focused on a specific problem related to agricultural teacher education in Ohio with research on a specific problem of trade and industrial teachers in New Jersey. Often, the occupational specialty focus and/or the state focus are necessary and desirable,

but when either or both can be broadened, the potential application and usefulness of the research may also be expanded. In this way the research may be better able to contribute to the development of a comprehensive and cumulative body of research on persistent problems of national significance in vocational teacher education.

At a recent seminar on vocational teacher education at the National Center, The Ohio State University, a group of prominent education deans and vocational teacher educators concluded that more and better research in vocational teacher education is a high priority need. They suggested that vocational education needs to develop a national agenda for programmatic research and development on critical issues, especially issues related to vocational teacher education. It was proposed that a respected and existing nationally representative group such as the American Vocational Education Research Association could play a leading role in the development of such an agenda. Alternatively, they agreed that a national commission could be establish and funded, perhaps through foundation or federal government support, to define such a research agenda.

The seminar participants also suggested that, in addition to creating a national research agenda, developing a handbook of research on vocational teacher education could be a valuable contribution, both in terms of upgrading the quality of research in the field and of facilitating programmatic and cumulative research and development. The extensive editorial and planning processes essential for the creation of such a handbook would be

invaluable to the periodic reassessment of the state of the art and continuing needs of teacher education research in vocational education.

Summary

This section of the report has summarized several of the broad critical issue areas and concerns related to the improvement of vocational teacher education. Obviously, this review is not exhaustive, and many other important issues need to be examined. Each vocational teacher education institution faces a unique set of needs and will need to pursue its own changes and improvements based upon its reading of the goals and objectives for improvement and its own status and needs relative to their achievement. It is hoped that this review of some of the critical issues and challenges facing vocational teacher education will be helpful in planning individual institutional improvements.

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